START

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MEETING MINUTES
Transmittal/Approval
for
RESPONSE TO EPA AND ECOLOGY COMMENTS ON
"A METHODOLOGY FOR ASSESSING IMPACTS TO GROUNDWATER
FROM DISPOSAL OF LIQUID EFFLUENT TO THE SOIL AT THE HANFORD SITE (M-17-13)"

Meeting Held
EPA Richland Office
Richland, WA
July 21, 1992

Approvals:

Doug Sherwood, EPA Region 10 — Date 7/21/92

Krystyna Kowalik, Washington State Dept. of Ecology — Date 7/21/92

Lance Mamiya, RL Liquid Effluent Program, USDOE — Date 7/21/92

Janice Williams, Liquid Effluent Program, WHC — Date 7/21/92

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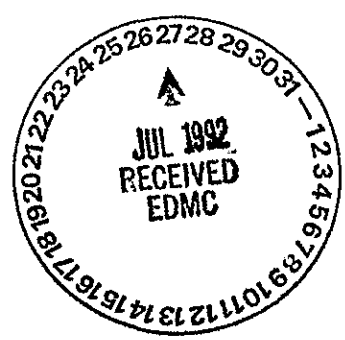
Purpose:

The meeting was held to: 1) Approve the comment resolutions on "A Methodology for Assessing Impacts to Groundwater from Disposal of Liquid Effluent to the Soil at the Hanford Site (M-17-13)" and 2) Discuss the *draft* Groundwater Impact Assessment Implementation Schedule.

Attachments:

1. EPA letter dated May 6, 1992
2. Ecology letter dated May 27, 1992
3. Draft implementation schedule
4. Meeting Attendance List

* Indicates additional comments added to minutes.
There are three Action Items.



Agenda Item 1: **RESPONSE TO EPA AND ECOLOGY COMMENTS ON "A METHODOLOGY FOR ASSESSING IMPACTS TO GROUNDWATER FROM DISPOSAL OF LIQUID EFFLUENT TO THE SOIL AT THE HANFORD SITE (M-17-13)".**

U.S. ENVIRONMENTAL PROTECTION AGENCY COMMENTS:

1. Table ES-1, p. ES-3

Concur. The 300 Area Process Trenches were mistakenly included in the TPA Milestone M-17-13 list of receiving sites. An updated impact assessment for the 300 Area Process Trenches is being performed in accordance with TPA Milestone M-17-06E, and is scheduled for submittal in July 1992.

It is recognized that a groundwater impact assessment for the 216-B-63 Ditch is required prior to resumption of disposal of effluents to that receiving site. The 216-B-63 Ditch was left off of the Table ES-1 list of receiving sites for which groundwater impact assessments are to be performed, because the effluent was rerouted to B-Pond in February 1992, as per TPA Milestone M-17-04B. That flow will then be rerouted to W-049H Treated Effluent Disposal Site which comes on line by June 1995.

Please note another minor error in the methodology document (p. 15, para. 1). Table ES-2 is incorrectly cited. Rather, Table ES-1 should be cited.

2. Section 2.2, Scope, p. 2

Acknowledged. Washington Department of Ecology is the responsible regulatory agency regarding WAC-173-216 and WAC-173-218.

3. Section 2.4, Assumptions, p. 3

The intent of assumption No. 5 (purge water limitations on aquifer testing) is to establish recognition of the fact that although aquifer pumping tests may in some instances be technically desirable, there may be insurmountable site-specific constraints to implementation. Some receiving sites (notably the 216-U-14 Ditch) are located in areas where local groundwater is contaminated. Large volumes of purgewater can be produced during an aquifer pumping test. A large volume of contaminated purge water may be impractical to contain, hence an aquifer pumping test would be impractical. Any aquifer tests resulting in production of purge water will be conducted in accordance with the purge water strategy document.

4. Section 4.1, Rationale, p. 6

Agreed. This is the intent of the Assessment Plan. The groundwater impact assessment methodology includes preparation of an Assessment Plan for each receiving site, as the first task in performing an impact assessment. The Assessment Plan will be presented to the regulators (EPA and Ecology) to assure that the data needs, and proposed approach are technically defensible and consistent with regulatory expectations. This process is designed to

encourage both regulator input and performance of the impact assessments in a timely fashion.

The Assessment Plan is based on readily available, existing data and includes an overview of:

- receiving site history
- adjacent facilities and potential influences
- effluent characteristics and key constituents
- a basic conceptual model of the receiving site's hydrogeologic framework and contaminant migration processes
- data needs and proposed data collection activities
- analytical techniques including proposed modeling and input data requirements
- impact assessment report format

Questions or concerns of the regulators will be addressed in a discussion after presentation of the Assessment Plan. The Assessment Plan and conditions of approval will be attached to the meeting minutes form and signed by representatives of Ecology, EPA and DOE.

Details of the conceptual model will be further developed through the course of performing the tasks necessary to complete the impact assessment. The resultant, more detailed conceptual model will be presented in the impact assessment report. Impact assessments involve an element of discovery. If additional data needs (new field data) are identified through the course of performing an impact assessment, then the regulators will be notified and their input solicited.

5. Section 4.2, Impact Assessment Criteria, pp. 7-10

Acknowledged. Concentrations based on 1/25th of the DCG are not numerically identical in all cases to the National Primary Drinking Water Standards (NPDWS). However, the 1/25-DCG approach provides a more comprehensive list of 4-mrem/yr equivalent radionuclide concentration guides than the NPDWS, and therefore is more directly applicable as a screening tool for Hanford radionuclides, that do not have a MCL.

Best available treatment may be a conceptually better approach but treatment efficacy will be partially dependent on effluent chemistry. Since this is highly variable, it could add significantly to the time required for evaluation and assessment.

6. Table 5-1, p. 16

Concur with EPA's concerns regarding limited data for the 216-T-1 Ditch and the 216-T-4-2 Ditch. These two receiving sites will be re-categorized to Level 3 with field data collection efforts. Soil samples will be collected and groundwater monitoring wells will be constructed as part of field data collection.

Acknowledge EPA's concerns regarding the need for a detailed impact assessment for the 1325-N LWDF. The modeling of contaminant migration from this facility is considered to be an intensive and detailed Level 1 effort. The 1325-N LWDF has a RCRA groundwater monitoring network, and ample field data available from other nearby monitoring activities. Data collected through ongoing RCRA and environmental monitoring activities are deemed adequate. Effluent discharge to the 1325-N LWDF is intermittent. The maximum allowed flow is 2 gallons per minute averaged over a calendar month. A schedule for annual discharge volumes for the remainder of the receiving site's use is under negotiation. Considering the relatively low discharge volume caps and the surface area over which that effluent will be distributed to percolate through the soil column, a Level 1 categorization is appropriate at this time. Preparation of the Assessment Plan provides an opportunity to consider the most up to date information. This categorization and the proposed approach to performing the impact assessment will be discussed at the Assessment Plan presentation. Concerns and issues raised by the regulators will be given close attention.

As for the categorization of the other receiving sites, please refer to response to EPA Comment No. 4, with regard to evaluating the adequacy of existing data for categorization.

Krystyna Kowalik, Ecology, requested documentation of the 2gpm flow at 1325-N. ACTION: TONY KNEPP, WHC, will supply such documentation/information by touring the facility.

WASHINGTON DEPARTMENT OF ECOLOGY COMMENTS:

1. Concur. Please note that some modeling efforts (Level 1) may rely on existing data or may use new field data, as defined in the methodology and described in the impact assessment plan.

2. Acknowledged. The worksheets represent a consolidation of a variety of information sources used in a subjective categorization of the receiving sites. That worksheet information which may be dated should remain, since it is a record of the original, subjective categorization process. The Assessment Plan will discuss the key factors considered in categorizing a receiving site and will serve as the most up to date information source regarding those factors. Please refer to the response to EPA comment No. 4 for an outline of the Assessment Plan and presentation.

3. Agreed.

4. Acknowledged. The table called out in this comment (Appendix - Table, pp. A-5/A-6) was not labelled correctly and should be labelled "Liquid Effluent Study Summary Table A-1." Compounding this error, the preceding text in the Appendix (p. A-1, para. 1) refers to Table A-2 for projected discharge rates and schedules, however that table was inadvertently labelled Table A-1, and placed in front of the summary table (presented on pp. A-5/A-6).

The summary table (pp. A-5/A-6) was abbreviated from Table 3.1 in the *Liquid Effluent Study Final Project Report*, (WHC-EPA-0367, Westinghouse Hanford Company), and was used to assist a subjective categorization process. Table footnotes cite references listed in that document. Although the Liquid

Effluent Study assembled much useful information, its limitations were recognized during categorization.

Agenda Item 2: **DISCUSSION ON THE DRAFT GROUNDWATER IMPACT ASSESSMENT (GIA) IMPLEMENTATION SCHEDULE** (see Attachment 4).

The schedule will be issued in a letter to EPA and Ecology fulfilling Tri-Party Agreement Milestone M-17-13A.

Doug Sherwood, EPA, expressed concern over the scheduling dates shown for the 216-B-3 Pond GIA. EPA wants to see these dates consistent with to support the closure of the B-Pond lobes. The GIA will supply data which could help to justify the RCRA closure and should therefore be completed prior to the closure date. It is important that the GIAs are used to support other Hanford projects and that data is integrated with other on-going sampling programs (ie. Phase 2 B-Pond Samples.)

Krystyna Kowalik, Ecology, agrees with the EPA's comment.

② ACTION: Janice Williams, WHC, will review the B-Pond closure schedule to explore the feasibility of having the GIA support the closure effort.

EPA, note on schedule that 100-D and B-Pond discharges are dependant on RCRA Clean Closures.

③ ACTION: Janice Williams, WHC, will revise schedule to add comment.

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United States
Environmental Protection
Agency

Region 10
Hanford Project Office
712 Swift Boulevard, Suite 5
Richland WA 99352

Attachment 1
9202771

EPA

May 6, 1992

Steven H. Wisness
Hanford Project Manager
U.S. Department of Energy
P.O. Box 550, A5-19
Richland, Washington 99352

Re: Comments on "A Methodology for Assessing Impacts to Groundwater from Disposal of Liquid Effluent to the Soil at the Hanford Site"

Dear Mr. Wisness:

The U.S. Environmental Protection Agency (EPA) has completed its review of Hanford Federal Facility Agreement and Consent Order Interim Milestone M-17-13, "A Methodology for Assessing the Soil at the Hanford Site", (WHC-SD-EN-EV-008). Overall, EPA considers the methodology to be a well written, succinct presentation of the approach to be used for the assessment of continued soil column discharge at Hanford. In addition, the approach allows the flexibility to concentrate on those liquid effluents and receiving sites with the greatest potential for impact from continued discharge.

EPA is prepared to approve the methodology in its present form, without revision, upon resolution of the attached comments. The attached comments deal primarily with the specifics of how the methodology is applied to individual waste streams and receiving sites and not to the methodology itself. EPA believes these concerns can be worked out in the near-term without delaying production and submittal of a schedule for completion of the assessments.

Of primary concern to EPA is the development of the conceptual model for each receiving site and the associated effluent stream. EPA would prefer that the U.S. Department of Energy (DOE) and Westinghouse Hanford Company (WHC) meet with the Washington State Department of Ecology (Ecology), EPA, and their contractors to discuss the preliminary conceptual model for each receiving site prior to proceeding with the impact assessment. This preliminary review will provide all parties with the assurance that the input data required to perform the assessment is technically defensible.

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Upon receipt of Ecology comments, a meeting should be scheduled to discuss any unresolved issues or any potential inconsistencies between the two sets of comments. Please feel free to call me at (509) 376-9529 if you have any questions about our comments.

Sincerely,

Douglas R. Sherwood
Environmental Engineer

Enclosure

cc: Dave Jansen/Toby Michelena, Ecology
Tony Knepp, WHC
Jim Mecca, DOE
Dave Nylander, Ecology
Ward Staubitz, USGS
Jonathan Williams, EPA
Tim Veneziano, WHC

A METHODOLOGY FOR ASSESSING IMPACTS TO GROUNDWATER FROM DISPOSAL OF LIQUID EFFLUENT TO THE SOIL AT THE HANFORD SITE - WHC-SD-EN-EV-008

COMMENTS

1. Table ES-1, page ES-3

Comment: Table ES-1 is somewhat inconsistent with the current language in Interim Milestone 17-13A. The language in the interim milestone identifies 14 receiving sites requiring impact assessments, but that list includes the 216-B-63 Ditch and does not include the 300 Area Process Trenches. On the other hand, Table ES-1 does not include the 216-B-63 Ditch and does include the 300 Area Process Trenches. EPA will consider the need for any additional assessment for the 300 Area Process Trenches after completion of the ongoing work related to the finalization of the Expedited Response Action Completion Report. In addition, EPA requests that DOE and WHC verify the status of the 216-B-63 Ditch.

2. Section 2.2, Scope, page 2

Comment: EPA has not reviewed this methodology against the requirements of WAC-173-216 or WAC-173-218.

3. Section 2.4, Assumptions, page 3

Comment: In assumption #5, DOE has asserted that the purge water management strategy has resulted in severe limitations on the use of aquifer testing. The strategy allows for exceptions to the storage requirements on a case-by-case basis. DOE has not requested an exemption of any aquifer testing. EPA does not accept this assertion and will examine the need for information on aquifer properties as needed.

4. Section 4.1, Rationale, page 6

Comment: EPA considers the input data described in this section to be the key to development of a technically sound impact assessment. A review of the input data and its incorporation into a receiving site conceptual model would be valuable. In addition, the conceptual model development will also serve to verify whether the existing data supports the predetermined categorization of the assessment level for each receiving site. If the available data (existing and/or new) does not support the identified assessment level a change in approach may be required. At this point, it would also be valuable to identify the specifics of the impact assessment approach including; identification of analytical, numerical, or computer model to be used, contaminants to be addressed in the assessments and adjacent facilities to be

examined for influence of continued discharge, if appropriate.

Such an effort would help to ensure that the expectations of the regulatory agencies are being met.

5. Section 4.2, Impact Assessment Criteria, pages 7-10

Comment: EPA will accept 1/25 the Derived Concentration Guide as the screening criteria for radiological constituents, but it should be understood that these concentrations are inconsistent with the National Primary Drinking Water Standards. Independent of these screening levels, a more important criteria may be a best available treatment approach. EPA does not advocate a change to the screening criteria.

6. Table 5-1, page 16

Comment: EPA is concerned that the available data may not be sufficient to proceed with an impact assessment based on existing data. Of primary concern is the category assigned to 216-T-1 Ditch and 216-T-4-2 Ditch for which little data is available. Reevaluation of this assignment may be needed based on a review of the conceptual model and its input data. Similarly, EPA is not convinced that a reduction in flow to 2 gallons/minute at 1325-N eliminates the need to perform a detailed assessment at this receiving site. Such an assessment may be necessary to evaluate whether 2 gallons/minute is an appropriate flow restriction. All other receiving sites appear to be assigned appropriately, but a review of the preliminary conceptual model would help to confirm that assumption.

Attachment 2

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

May 27, 1992

Steven H.Wisness
Hanford Project Manager
U.S. Department of Energy
P.O. Box 550, A5-19
Richland, Washington 99352

Dear Mr. Wisness:

An Approval of "A Methodology for Assessing Impacts to Groundwater from Disposal of Liquid Effluent to the Soil at the Hanford Site (M-17-13)".

Ecology has completed our review of the above referenced document. This document addresses the intent of Milestone M-17-13 and proposes a methodology which will establish what kind of impact Liquid Effluent has on groundwater. Ecology can approve the proposed methodology with minor changes. It is imperative that USDOE coordinate each aspect of the project during its implementation with Ecology and EPA. A check point should be established to allow for coordination at each stage of a project. The check points shall be included in the flowchart, Figure ES-2. At such time each task will be reviewed and individual facilities will be discussed so appropriate changes can be made. The ongoing dialogue since October 1991 between Ecology and the Westinghouse Geoscience group has resulted in basic agreement as to the main framework of this methodology.

At this time, work for developing schedules should proceed without any further delay. However, there are minor improvements that will add clarity to the document.

The following comments outline which area require attention:

1. All modeling performed for groundwater flow and contaminant travel rate should be validated after new field data will be available. The use of models should be viewed as an additional tool not as the singular method used to evaluate data such as contaminant transport through vadose zone. It should not be used to oversimplify acute problems that exist at certain facilities where liquid discharges have occurred.

2. The worksheets for each facility should be updated prior final negotiations between Ecology, EPA, USDOE and Westinghouse.

3. Ecology fully agrees with EPA comment regarding purge water Policy (EPA comment #3- Assessment Document-Page 3 Sec.2.4 Assumption 3). If any pumping tests will be conducted, utmost consideration should be given to slightest possibility of spreading contamination throughout groundwater.

   The necessity for conducting pumping tests shall be approved by Ecology (and EPA) and such testing will be performed only in circumstances well defined prior to the actual test. Specifically if there is no data regarding the aquifer beneath particular facility and there is no danger of spreading contamination by pumping large volumes of water the testing might be approved. The consideration shall always be given to human health and environmental impact in conducting any testing at the Hanford Site, including pumping tests .

4. Table A-5/A6 incorporates all 14 receiving sites and effluent stream characteristics. The footnotes intended to provide basis for individual sites evaluation should be updated and state clearly how each one is relevant to an assessment methodology.

As stated previously, based on provided information included in this document, Ecology approves "A Methodology for Assessing Impacts to Groundwater from Disposal of Liquid Effluent to the Soil at Hanford Site" provided that the issues identified above will be resolved within 30 days.

Should you have any questions, please contact me at (206) 438-7526.

Sincerely,

K. Kowalik

Krystyna Kowalik

c.c. Dave B. Jansen, Ecology
Tony Knepp, WHC
Dave Nylander, Ecology
Dough Sherwood, EPA

DRAFT

Attachment 3

MILESTONE M-17-13A
GROUNDWATER IMPACT ASSESSMENT IMPLEMENTATION SCHEDULE
FOR INTERIM COMPLIANCE WASTE STREAM RECEIVING SITES

RECEIVING SITE	CONTRIBUTING WASTE STREAMS	Level Effort Category	Start Date	Present Assessment Plan	Impact Assessment Report	Cease Discharge
216-U-14 Ditch	UO3/U Plant Wastewater, 242-S Evaporator Steam Condensate, Surface Contamination Control Water	3	10/92	1/93	1/94	6/95
1325-N LWDF	N Reactor Effluent	1	2/93	4/93	9/93	6/95
216-W-LC Crib	2724-W Laundry Wastewater	2	2/93	4/93	2/94	1/95
216-Z-20 Crib	Plutonium Finishing Plant Wastewater	2	10/92	12/92	10/93	6/95
216-U-17 Crib	UO3 Plant Process Condensate	1	11/92	1/93	6/93	6/95
216-S-26 Crib	222-S Laboratory Wastewater	1	4/93	6/93	11/93	6/95
216-T-1 Ditch	T-Plant Laboratory Wastewater	3	10/93	1/94	2/95	6/95
216-T-4-2 Ditch	T-Plant Wastewater	3	10/93	1/94	2/95	6/95
284-W Powerhouse Pond	284-W Powerplant Wastewater	1	2/93	4/93	9/93	6/95
2101-M Pond	2101-M Laboratory Wastewater	1	2/93	4/93	9/93	6/95
400 Area Ponds	400 Area Secondary Cooling Water	1	3/92	8/92	10/92	216 Permit
100-D Ponds	183-D Filter Backwash Wastewater	3	11/92	1/93	7/93	216 Permit
216-B-3 Pond System	242-A Evaporator Cooling Water, 242-A Evaporator Steam Condensate, B Plant Cooling Water, 241-A Tank Farm Cooling Water, 284-E Powerplant Wastewater, 244-AR Vault Cooling Water	3	10/93	1/94	1/95	216 Permit

Note: Under the Cease Discharge column, "216 Permit" denotes those receiving sites for which a WAC 173-216 State Waste Discharge Permit application will be submitted to the Washington Department of Ecology.

Attachment 4

ATTENDANCE LIST

Meeting held @
EPA Richland Office
Richland, WA
July 21, 1992
8:30 a.m.

Name	Organization	Phone #
Janice D. Williams	WHC-Liquid Effluent Program	(509)373-1759
Daniel K. Tyler	WHC - Geosciences	376-6523
[illegible]	SAIC - WMD	372-1470
L.E. Borneman	WHC - TPA	509/372-~~5010~~ 0501
Doug Sherwood	EPA	509-376-9529
L.S. MAMIYA	RL - WMD	376-1471
R.N. Krekel	RL - EAP	376-4264
A. J. Knepp	WHC	376-3398
K. Kowalski	Ecology	438-7591

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7/24/92

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